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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,922	01/26/2004	Carles Borrego Bel	LEAR8136ESPUSA	1921
34007	7590	07/09/2008		
BROOKS KUSHMAN P.C. / LEAR CORPORATION			EXAMINER	
1000 TOWN CENTER			PARRIES, DRU M	
TWENTY-SECOND FLOOR				
SOUTHFIELD, MI 48075-1238			ART UNIT	PAPER NUMBER
			2836	
			NOTIFICATION DATE	DELIVERY MODE
			07/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Office Action Summary	Application No. 10/707,922	Applicant(s) BORREGO BEL ET AL.	
	Examiner DRU M. PARRIES	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4-11-08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 16-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 16-21, 23-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinas et al. (6,507,506), Maeda (6,340,848), and Schaal (5,625,546). Regarding independent claim 16, Pinas teaches a vehicle having first (B12) and second (B36) batteries at different voltage levels that supply power to the vehicle loads, where each network (14V and 42V networks) can feed the other via bi-directional DC-DC converter (20). (Fig. 2) Pinas fails to explicitly teach having first and second converters providing power to first and second loads and

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the method used to provide power to the loads. Maeda teaches a power distribution system in a vehicle comprising sets of 14V loads and 42V loads in different parts of the vehicle each connected to a distribution box (31, 33, 35) containing a DC/DC converter (31c, 33c, 35c) corresponding to each set of loads. (Fig. 2) Schaal teaches a variable allocation power distribution system comprising a plurality of (i.e. 1st, 2nd, and 3rd) converters (I) and a corresponding plurality of (i.e. 1st, 2nd, 3rd) loads (L). Schaal teaches the idea of the loads having an increased power level rating at times during operation that is greater than the amount of power that is capable of being provided by a single one of the converters. He also teaches a controller (7) coupled to each of the converters and loads that detects the amount of power that is consumed by each of the loads and selectively controls one of the converters to cooperate with another one of the converters to generate enough power to satisfy at least one of the increased power level ratings of one of the loads in response to detecting that the amount of power that is consumed by at least one of the loads is approaching one of the increased power level ratings. (Fig. 1; Col. 2, lines 11-28; Col. 3; and in particular Col. 3, lines 55-61) It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the arrangement of Maeda's distribution boxes and have a plurality of DC/DC converters assigned to particular sets of loads in different parts of Pinas' vehicle to minimize the amount of wires running through the system. It also would have been obvious to one of ordinary skill in the art at the time of the invention to implement Schaal's plurality of DC/DC converters in each of the distribution boxes and his method of supplying power to each load to be able to supply the exact right amount of power to each load at any given time and subsequently minimize power losses and in turn save money.

Regarding claims 17-18, Schaal teaches that there could be any number of loads and any number of converters in his system all functioning the same way, depending upon the design choice of the user.

Regarding claims 19-21, Schaal teaches determining the amount of power being provided by each converter. Schaal also gives an example when each converter's maximum amount of generated power is less than its corresponding load's power rating level. Schaal also teaches that each converter's capabilities can and should be dependent upon its corresponding load's demands to minimize power losses. He fails to explicitly teach having the converter that is generating the lowest amount of power cooperate with another to satisfy an increased power level rating, nor does he explicitly teach the first and second converter's maximum amount of power being equal, however, it would have been obvious to one of ordinary skill in the art at the time of the invention to have all of the converters having the same maximum generated power and/or to have the converter that generates the lowest amount of power to cooperate with another converter to satisfy an increased power rating, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Also, the above Pinas/Maeda/Schaal combination is configured to do and capable of doing all that is claimed.

Regarding claims 23-26 and 28, the above combination and teachings from Pinas, Maeda, and Schaal read on these claims.

5. Claims 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinas et al. (6,507,506), Maeda (6,340,848), and Schaal (5,625,546) as applied to claims 16 and 23 above, and further in view of Akerson (6,344,985). Pinas, Maeda, and Schaal teaches a power

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distribution system for a vehicle as described above. They fail to explicitly teach the first, second, and third converters arranged throughout the system to be bi-directional. Akerson teaches a power distribution system that could be used in vehicles comprising the idea of having bi-directional converters throughout the system. (Fig. 7; Col. 1) It would have been obvious to one of ordinary skill in the art at the time of the invention to have all of the converters in the combination Pinas invention to be bi-directional so that power can be transferred in both directions, particularly because of the system functioning with two different voltage levels. Another reason to use bi-directional converters is because some loads may have rotational energy (i.e. motor/generators) that can be taken back into the system when the load is being turned off and that energy can be preserved and reused somewhere else in the system, and that in turn minimizes losses and saves money.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on Monday -Thursday from 9:00am to 6:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry, can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael J Sherry/

Supervisory Patent Examiner, Art Unit 2836

DMP

7-2-2008